APPENDIX D: RELIABILITY AND RMR CONTRACTS

System reliability requires that customer needs throughout the state be met during hours of peak demand during the summer. This, in turn, requires enough generation capacity, plus imported energy to equal roughly 115 percent -117 percent of peak demand. The additional 15 percent - 17 percent are planning reserves, needed to ensure that sufficient energy will be delivered in all hours even if a share of the capacity is unavailable due to sudden outage or planned maintenance.

Local reliability requires that sufficient generation capacity be available in CA ISO-defined *local reliability areas* (LRA) to ensure uninterrupted service in all hours even when a major power plant or transmission line fails. The CA ISO has defined nine of these areas, characterized by transmission constraints and insufficient local generation to ensure meeting customer needs under adverse conditions (high demand and/or component failure; see Figure D-1. These areas are generally defined as locations within a utility's service area that could experience outages or reduced power quality when two or more large components fail, such as the loss of a major transmission line due to a circuit breaker failure, or the loss of a generating unit due to a turbine trip. This is known as "n – 2" (n minus 2) reliability criteria. Areas that do not currently meet the requirements to become an LRA, because service to that area would not be interrupted in an n – 2 condition, could experience local reliability problems and become and LRA following the retirement of one or more generating units in that area, especially if the transmission system in that area is somewhat constrained. Local reliability problems can be addressed through transmission system upgrades, or by ensuring remaining generation stays online to provide reliability service.

The CA ISO addresses the need for additional generating capacity within an LRA by awarding one-year **Reliability Must-Run (RMR) contracts** to local generators. These contracts ensure that the unit will be available when needed, in exchange for payment of all or part of its fixed operating costs.[1] Because these generators are needed for reliability during some hours, they could charge high prices during these hours; the RMR contracts ensure that the prices paid for their services during these hours are competitive (cost-based). The CA ISO weighs the annual cost of the RMR contract against the annual cost of any possible alternative, such as for transmission system upgrades, and generally chooses the least-cost option.

The CA ISO control area is divided into three zones, roughly corresponding to northern, central and southern California. The latter, known as SP15, has been

[1] Condition 2 RMR contracts, which pay 100 percent of the unit's going-forward capital costs, are provided when the unit is deemed incapable of competing in the marketplace. Under the terms of this contract, the unit is prohibited from participating in the CA ISO's energy and ancillary service markets. Under Condition 1 contracts, only a negotiated share of the unit's capital costs are paid, but the unit is eligible to participate in the CA ISO markets.

recently experienced higher than anticipated demand growth, especially during the past year; but most new power plants built in the past four years have been constructed in the other zones. Accordingly, SP15 is experiencing **zonal reliability** problems, as the amount of power that can be simultaneously imported over major transmission paths into SP15 is limited. The CA ISO has often responded to this import limitation by using its authority to direct plants to make energy available under a **must-offer order**, a product of a FERC decision during the 2000 – 2001 energy crisis. Though RMR contracts have historically been entered into solely to deal with local reliability concerns, the CA ISO has recently petitioned FERC to allow it to use existing RMR plants to deal with zonal reliability issues;.

Figure D-1


AGING POWER PLANTS
Legend
ISO Zonal Bounds
Generation Deficient FME Areas
ISO Service Area
CA Counties
WECC Control Bounds
Power Plants
Non-FME
FME
Transmission Lines
110 kV - 161kV
230 kV - 287 kV
345 kV - 500 kV
345 kV - 500 kV DC
Transmission Line Ownership
SDG&E
WAPA
SCE
LADWP
PG&E
SMUD
ALL OTHERS
50 0 50 100 Miles